4 April 1960

Dear Doc:

I am enclosing two (2) drawings showing ground coverage which can be obtained with a 60" lens from the altitude that we have been talking about. Since the positions show the center line of the lens the actual coverage is 113°. In this particular layout some compromise had to be made in order to eliminate gaps shown in the first print. We are proceeding to lay out another mode which would include 1L vertical, 1R, 2R, 3R and 4R positions which would pick up additional coverage near the horizon. This kind of mode would allow a much wider coverage on the one side on which best lighting and/or cloud conditions prevailed. You will notice that in a normal mission one high oblique side is practically always superior to the other. This approach appears at the moment to be an excellent compromise.

You will note that we have a cycling time of approximately 1 second which is quite a bit better than the .8 time that we obtained from our initial rough consideration of the problem. This particular approach, by the way, is the approach that will be used throughout the study. This small gain in cycling time will be quite significant when applied to the parameters of the camera design and we would certainly want to look at this more intensively to find even a small increment of time.

It appears that if we can obtain a lens in which the nodal point is moved forward approximately 10" then we would be able to gain the necessary 4" in space and additionally would be able to use windows the same size as the lens aperture.

The shutter problem is some what more complex and would require considerable investigation before a definitive answer could be given. To do a complete job it would probably be necessary to make some breadboards and actually carry out experimentations. The main problem in placing the shutter over the window would be the high speed at which it would have to operate in order to give the required exposure times. The problem in the between the lens shutter is, of course, the cycling time which, however, does not appear to be insurmountable.

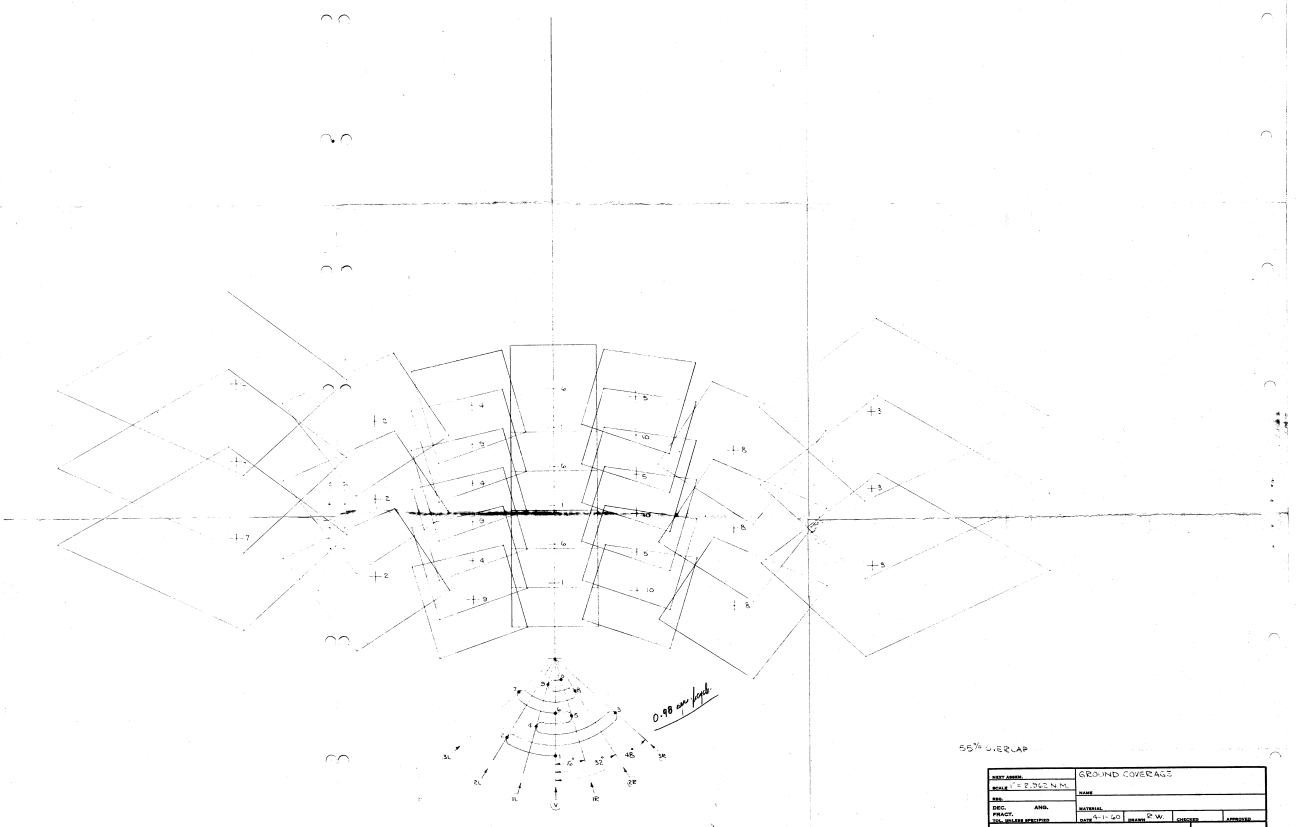
I hope that these drawings will be of assistance to you in evaluating this new system.

Very truly yours,

HYCON MFG. COMPANY

[redacted] STATINTL

KEH/pb



NEXT ASSEM.	GROUND COVERAGE
SCALE 1" = 2,562 N.M.	NAME
REQ.	
DEC. ANG.	MATERIAL
FRACT.	
TOL. UNLESS SPECIFIED	DATE 4-1-60 DRAWN R.W. CHECKED APPROVED
HYCON MFG. COMPANY PASADENA, CALIFORNIA	DRAWING NO